



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10732,853	12/10/2003	Erika Bellmann	56948US024	8898
32692	7590	02/09/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			MCPHERSON, JOHN A	
			ART UNIT	PAPER NUMBER
			1756	
DATE MAILED: 02/09/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/732,853

Applicant(s)

BELLMANN ET AL.

Examiner

John A. McPherson

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-18 and 20-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-18 and 20-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/12/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the Amendment filed 11/16/04.
2. The Amendment filed 11/16/04 successfully overcomes the rejection and objection set forth in paragraphs 1-2 of the Office Action mailed 8/5/04. Accordingly, the objection and rejection are withdrawn.

Allowable Subject Matter

3. The indication of allowable subject matter in original claims 5, 8, 19 and 21 is withdrawn in view of the newly applied reference(s). Rejections based on the newly applied reference(s) follow.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 7 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims are indefinite because they present limitations which appear to be in conflict with the requirements of the claims upon which they depend.

Specifically, each of dependent claims 6, 7 and 20 (all original claims) require that the matrix of the present invention comprise a dendrimer. However, claims 1 and 16, upon which claims 6, 7 and 20 ultimately depend, have been amended such that the matrix is no longer generic to any amorphous non-polymeric organic compound, but is now limited to specified tetrahedral core compounds. Tetrahedral core compounds and dendrimers are alternative embodiments for the amorphous matrix of the present invention. It is unclear how the matrix can be a dendrimer, as required in claims 6, 7 and 20, if it is also required to be a tetrahedral core compound, as in amended claims 1 and 16. Alternatively, claims 6, 7 and 20 could be interpreted as requiring the matrix to be a mixture of tetrahedral core compounds and dendrimers, however this is not clearly stated in the claims, and furthermore such an embodiment does not appear to be described in the specification.

5. Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 is drawn to a donor sheet, however the last line of the body of the claim contains a method step. Accordingly, it is not clear if this claim is drawn to a donor sheet or to a method of using the donor sheet.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

Art Unit: 1756

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 6-7, 20 and 26-28 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,844,128. Although the conflicting claims are not identical, they are not patentably distinct from each other. The presently claimed invention differs from the patented invention in that the present claims require the amorphous matrix to comprise a structurally specified dendrimer and/or a light emitting material, while the patented claims include light emitting dendrimers and an electrically active material generically. The presently claimed invention can not be considered patentably distinct from the patented claims because it would be obvious to one skilled in the requisite art to utilize the structurally specified dendrimers, where required, because the specifically disclosed embodiment which provides support for, or defines the terms of the claims of the patent include these structures. Furthermore, it would be obvious to one skilled in the requisite art to utilize a light emitting material as the electrically active material because the specifically disclosed embodiment that provides support for, or defines the terms of the claims of the patent includes light emitting materials as electrically active materials.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 851 714 [reference B1 of the Information Disclosure Statement filed 12/10/03] (EP '714) in view of "Recent developments in Molecular Electroluminescent Materials" by Chen et al. [reference C3 of the Information Disclosure Statement filed 12/10/03] (Chen).

EP '714 discloses a donor film for making an organic electroluminescent (EL) device, and a method of manufacturing an organic EL device comprising laser transfer of material from a transfer layer of the donor film, wherein the transfer layer comprises at least one of a luminous material, a hole transfer low molecular weight compound, a hole transfer high molecular weight compound, an electron transfer low molecular weight compound, and an electron transfer low molecular weight compound. See the abstract and page 2, line 53 to page 3, line 25. In one embodiment, the transfer layer comprises a combination of either an electron transfer material or a hole transfer material with a luminous material to form a electron transfer emission layer or a hole transfer emission layer, respectively (see Figures 1B and 1C; and page 8, lines 31-34). Exemplified hole transfer low molecular weight compounds include compound 11 on page 7, which is an amorphous, non-polymeric, organic dendrimer (see compound 10

on page 16 of the present specification). However, EP '714 does not disclose a hole transfer material comprising a dendrimer of the presently claimed invention.

Chen discloses hole transport materials useful in organic EL devices (see pages 9-15), such as several compounds exemplified by EP '714, including the dendrimer compound 11, as well as other dendrimers, for example tris-(phenothiazinyl)-triphenylamine or tris-(phenoxazinyl)-triphenylamine derivatives (see page 13). It would have been obvious to one skilled in the requisite art to utilize compounds such as tris-(phenothiazinyl)-triphenylamine or tris-(phenoxazinyl)-triphenylamine derivatives, as taught by Chen, as the hole transport material in the donor film and methods of EP '714 because it is taught that these dendrimer compounds are functional equivalents to the dendrimer compounds of EP '714 as hole transport materials in organic EL devices.

8. Claims 1-4, 6-7, 9-18, 20 and 22-25 rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 851 714 [reference B1 of the Information Disclosure Statement filed 12/10/03] (EP '714) in view of WO 00/03565 [reference B7 of the Information Disclosure Statement filed 12/10/03] (WO '565).

EP '714 discloses a donor film for making an organic electroluminescent (EL) device, and a method of manufacturing an organic EL device comprising laser transfer of material from a transfer layer of the donor film, wherein the transfer layer comprises at least one of a luminous material, a hole transfer low molecular weight compound, a hole transfer high molecular weight compound, an electron transfer low molecular weight compound, and an electron transfer low molecular weight compound. See the

Art Unit: 1756

abstract and page 2, line 53 to page 3, line 25. In one embodiment, the transfer layer comprises a combination of either an electron transfer material or a hole transfer material with a luminous material to form a electron transfer emission layer or a hole transfer emission layer, respectively (see Figures 1B and 1C; and page 8, lines 31-34). Exemplified hole transfer low molecular weight compounds include compound 10 on page 7. However, EP '714 does not disclose a hole transfer material comprising a tetrahedral core compound of the present invention.

WO '565 discloses amorphous molecular materials for organic EL devices, wherein the materials comprise compounds having tetrahedral shaped core structures. See the abstract and pages 9-11. Furthermore, WO '565 discloses that tetrahedral core compounds have higher glass transition temperatures and lower crystallization velocities than conventional hole transport materials, including TPD (which corresponds to compound 10 of EP '714). See page 3, line 16 to page 5, line 2. It would have been obvious to one skilled in the requisite art to utilize tetrahedral core compounds, as taught by WO '565, as the amorphous hole transport material of the donor film and methods of EP '714 because it is taught that utilizing tetrahedral core compounds in place of TPD increases the glass transition temperature and lowers the crystallization velocity, such that the organic EL device continues to function at high temperatures.

9. Claims 8, 21 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 851 714 [reference B1 of the Information Disclosure Statement filed 12/10/03] (EP '714) in view of "Charge-Transporting Polymers and Molecular

Glasses" by Grazulevicius et al. [reference C7 of the Information Disclosure Statement filed 12/10/03] (Grazulevicius).

EP '714 discloses a donor film for making an organic electroluminescent (EL) device, and a method of manufacturing an organic EL device comprising laser transfer of material from a transfer layer of the donor film, wherein the transfer layer comprises at least one of a luminous material, a hole transfer low molecular weight compound, a hole transfer high molecular weight compound, an electron transfer low molecular weight compound, and an electron transfer low molecular weight compound. See the abstract and page 2, line 53 to page 3, line 25. In one embodiment, the transfer layer comprises a combination of either an electron transfer material or a hole transfer material with a luminous material to form a electron transfer emission layer or a hole transfer emission layer, respectively (see Figures 1B and 1C; and page 8, lines 31-34). Exemplified hole transfer low molecular weight compounds include compound 11 on page 7, which is an amorphous, non-polymeric, organic dendrimer (see compound 10 on page 16 of the present specification). However, EP '714 does not disclose a hole transfer material comprising either a spiro compound or a dendrimer of the presently claimed invention.

Grazulevicius discloses hole transporting molecular glasses comprising compounds such as compounds exemplified by EP '714, including the dendrimer compound 11, as well as other dendrimers, for example 4,4',4''-tris(N-phenothiazinyl) triphenylamine (see compounds 71a and 73 on page 260, page 13), and spiro compounds (see compounds 83a, 83b and 84 on page 263). It would have been

Art Unit: 1756

obvious to one skilled in the requisite art to utilize compounds such as 4,4',4''-tris(N-phenothiazinyl) triphenylamine or spiro compounds, as taught by Grazulevicius, as the hole transport material in the donor film and methods of EP '714 because it is taught that these dendrimer and spiro compounds are functional equivalents to the dendrimer compounds of EP '714 as hole transport materials in organic EL devices.

Response to Arguments


10. Applicant's arguments with respect to claims 1-4, 6-18 and 20-28 have been considered but are moot in view of the new ground(s) of rejection.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. McPherson whose telephone number is (571) 272-1386. The examiner can normally be reached on Monday through Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1756

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John A. McPherson
Primary Examiner
Art Unit 1756

JAM
2/4/05